

1       WHAT IS CLAIMED IS:

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1. A timing controller for a liquid-crystal display panel comprising:

10                  a data enable signal detection circuit which detects a data enable signal applied to the timing controller; and

15                  a timing generating circuit which controls a display timing of image data to be displayed on the liquid-crystal display panel on the basis of the data enable signal detected by the data enable signal detection circuit.

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2. The timing controller as claimed in claim 1, wherein the timing generating circuit comprises a first circuit which generates, from the data enable signal, a first start pulse which starts driving each data line of the liquid-crystal display panel, and a second circuit which generates, from the data enable signal, a second start pulse which starts driving scanning lines of the liquid-crystal display panel.

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3. The timing controller as claimed in claim 1, wherein the timing generating circuit comprises a circuit part which detects a beginning of each frame on the basis of the data enable signal.

1                  4. The timing controller as claimed in  
claim 1, further comprising:

5                  a synchronizing signal detection circuit  
which detects vertical and horizontal synchronizing  
signals; and

10                a pseudo-data-enable signal generating  
circuit which generates a pseudo-data-enable signal  
when the synchronization signal detection circuit  
detects the vertical and horizontal synchronizing  
signals while the data enable signal detection circuit  
does not detect the data enable signal,

                  wherein the timing generating circuit  
controls the display timing of image data on the basis  
of the pseudo-data-enable signal.

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20                5. The timing controller as claimed in  
claim 1, further comprising:

                  a synchronizing signal detection circuit  
which detects vertical and horizontal synchronizing  
signals; and

25                a protection circuit which generates a  
pseudo-data-enable signal when the data enable signal  
and the vertical and horizontal synchronizing signals  
are not detected,

                  wherein the timing generating circuit  
controls the display timing of image data on the basis  
30                of the pseudo-data-enable signal.

35                6. A method of controlling a display timing  
for a liquid-crystal display panel, the method  
comprising the steps of:

- 1                             (a) detecting a data enable signal applied  
together with image data; and
- 5                             (b) controlling the display timing of the  
image data to be displayed on the liquid-crystal  
display panel on the basis of the data enable signal  
detected by the step (a).

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8. The liquid-crystal display device as  
claimed in claim 7, wherein the timing generating  
circuit comprises a first circuit which generates,  
from the data enable signal, a first start pulse which  
starts driving each of the data lines, and a second

1       circuit which generates, from the data enable signal,  
a second start pulse which starts driving the scanning  
lines.

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9.     The liquid-crystal display device as  
claimed in claim 7, wherein the timing generating  
10     circuit comprises a circuit part which detects a  
beginning of each frame on the basis of the data  
enable signal.

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10.     The liquid-crystal display device as  
claimed in claim 7, further comprising:

20     a synchronizing signal detection circuit  
which detects vertical and horizontal synchronizing  
signals; and

25     a pseudo-data-enable signal generating  
circuit which generates a pseudo-data-enable signal  
when the synchronization signal detection circuit  
detects the vertical and horizontal synchronizing  
signals while the data enable signal detection circuit  
does not detect the data enable signal,

30     wherein the timing generating circuit  
controls the display timing of image data on the basis  
of the pseudo-data-enable signal.

35     11.    The liquid-crystal display device as  
claimed in claim 7, further comprising:

      a synchronizing signal detection circuit

1 which detects vertical and horizontal synchronizing  
signals; and

5 a protection circuit which generates a  
pseudo-data-enable signal when the data enable signal  
and the vertical and horizontal synchronizing signals  
are not detected,

10 wherein the timing generating circuit  
controls the display timing of image data on the basis  
of the pseudo-data-enable signal.

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15 12. The liquid-crystal display device as  
claimed in claim 7, further comprising:

12. a synchronizing signal detection circuit  
which detects vertical and horizontal synchronizing  
signals;

20 a pseudo-data-enable signal generating  
circuit which generates a first pseudo-data-enable  
signal when the synchronization signal detection  
circuit detects the vertical and horizontal  
synchronizing signals while the data enable signal  
detection circuit does not detect the data enable  
signal; and

25 a protection circuit which generates a  
second pseudo-data-enable signal when the data enable  
signal and the vertical and horizontal synchronizing  
signals are not detected,

30 wherein the timing generating circuit  
controls the display timing of image data on the basis  
of any of the data enable signal, the first pseudo-  
data-enable signal and the second pseudo-data-enable  
signal.

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